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Nata

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Client:

LumCAT: 3-1698-N

Luminaire: 92.70.045.00+92.70.089.00

Report No: nata-0100

Test No: GC2018060104

LampCAT: NICHIA NFCWD084B-V3

Lamp flux(lm): 2152.5

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.5000

Power (W): 17.0000

PF: 0.0000

Ballast type: DC

Width(mm): 78

Height(mm): 0

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Photometric Results

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Lumens(lm): 1700.50, Efficiency(%): 79.00% , Luminous Efficacy(lm/W): 100.03

Central intensity(cd): 12038.080, Maximum intensity(cd): 12038.080

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.8

[C90/270]Total=16.8

Field angle(10%Imax): [C0/180]Total=30.8

[C90/270]Total=30.8

Maximum s/h(1/2): C0\_180=0.29 C90\_270=0.29

Maximum s/h(1/4): C0\_180=0.30 C90\_270=0.30

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 82.27%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 94.375%

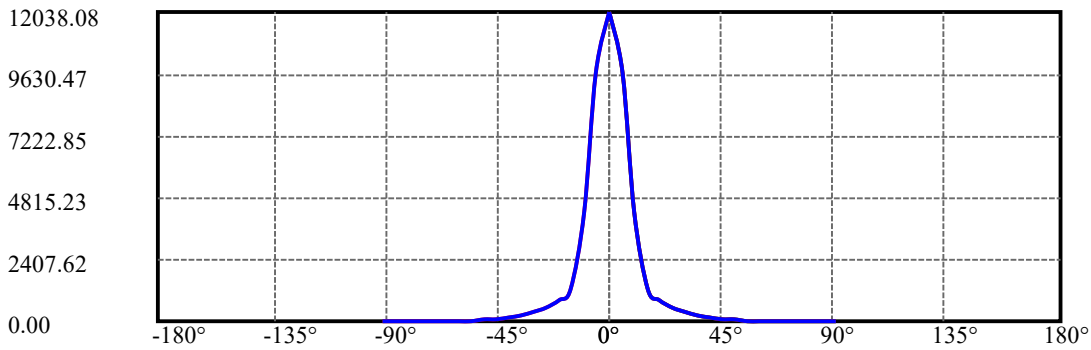
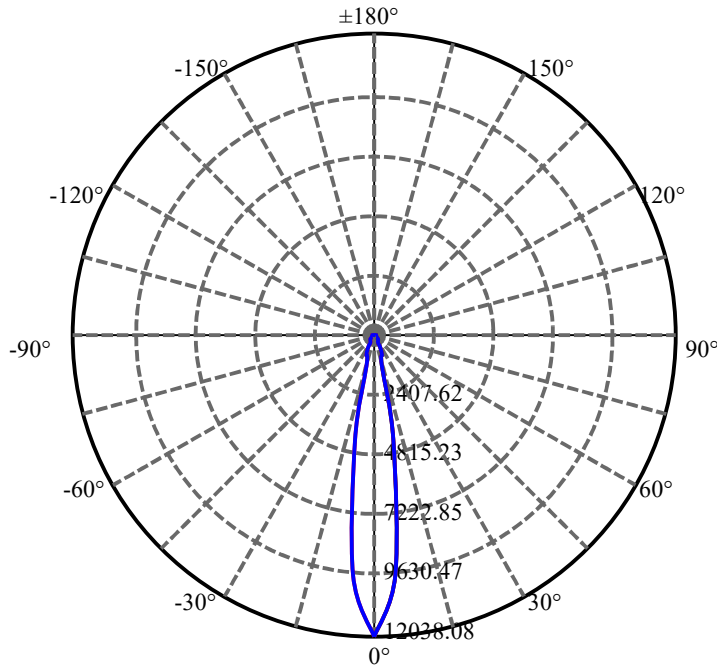
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12038.082	71.990	71.99	3.344%	4.233%
5.0	9614.224	459.303	531.294	21.338%	31.243%
10.0	4262.122	405.682	936.975	18.847%	55.100%
15.0	1236.154	175.371	1112.347	8.147%	65.413%
20.0	786.577	147.463	1259.809	6.851%	74.085%
25.0	515.865	119.502	1379.311	5.552%	81.112%
30.0	336.567	92.242	1471.553	4.285%	86.537%
35.0	216.385	68.031	1539.585	3.161%	90.537%
40.0	145.659	51.321	1590.905	2.384%	93.555%
45.0	94.463	36.613	1627.518	1.701%	95.708%
50.0	55.504	23.306	1650.824	1.083%	97.079%
55.0	28.726	12.898	1663.722	.599%	97.837%
60.0	15.884	7.540	1671.262	.350%	98.281%
65.0	12.773	6.345	1677.608	.295%	98.654%
70.0	11.404	5.874	1683.482	.273%	98.999%
75.0	10.268	5.437	1688.918	.253%	99.319%
80.0	9.580	5.171	1694.089	.240%	99.623%
85.0	8.217	4.487	1698.576	.208%	99.887%
90.0	7.006	1.920	1700.496	.089%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1471.55	68.36%	86.54%
0-40	1590.91	73.91%	93.56%
0-60	1671.26	77.64%	98.28%
0-90	1698.58	78.91%	99.89%
0-120	1698.58	78.91%	99.89%
0-180	1700.50	79.00%	100.00%
60-90	34.85	1.62%	2.05%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.21	1360.40	63.20%	80.00%

ZONAL LUMEN SUMMARY

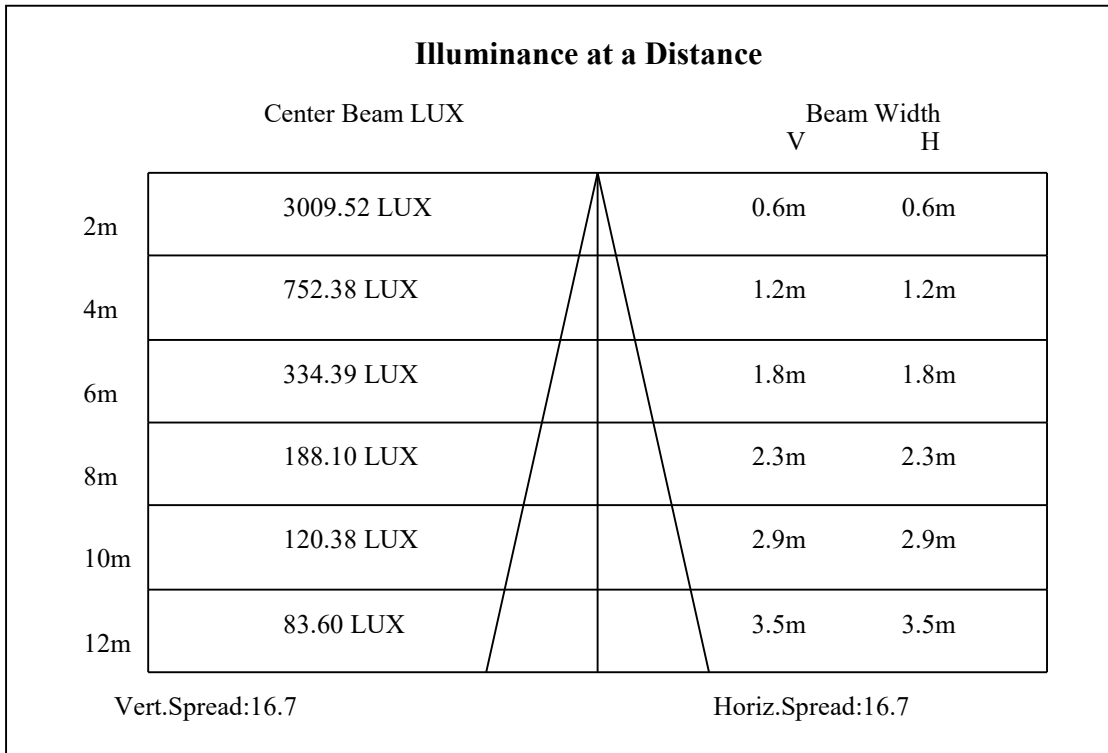
0-10	936.98
10-20	322.83
20-30	211.74
30-40	119.35
40-50	59.92
50-60	20.44
60-70	12.22
70-80	10.61
80-90	4.49
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

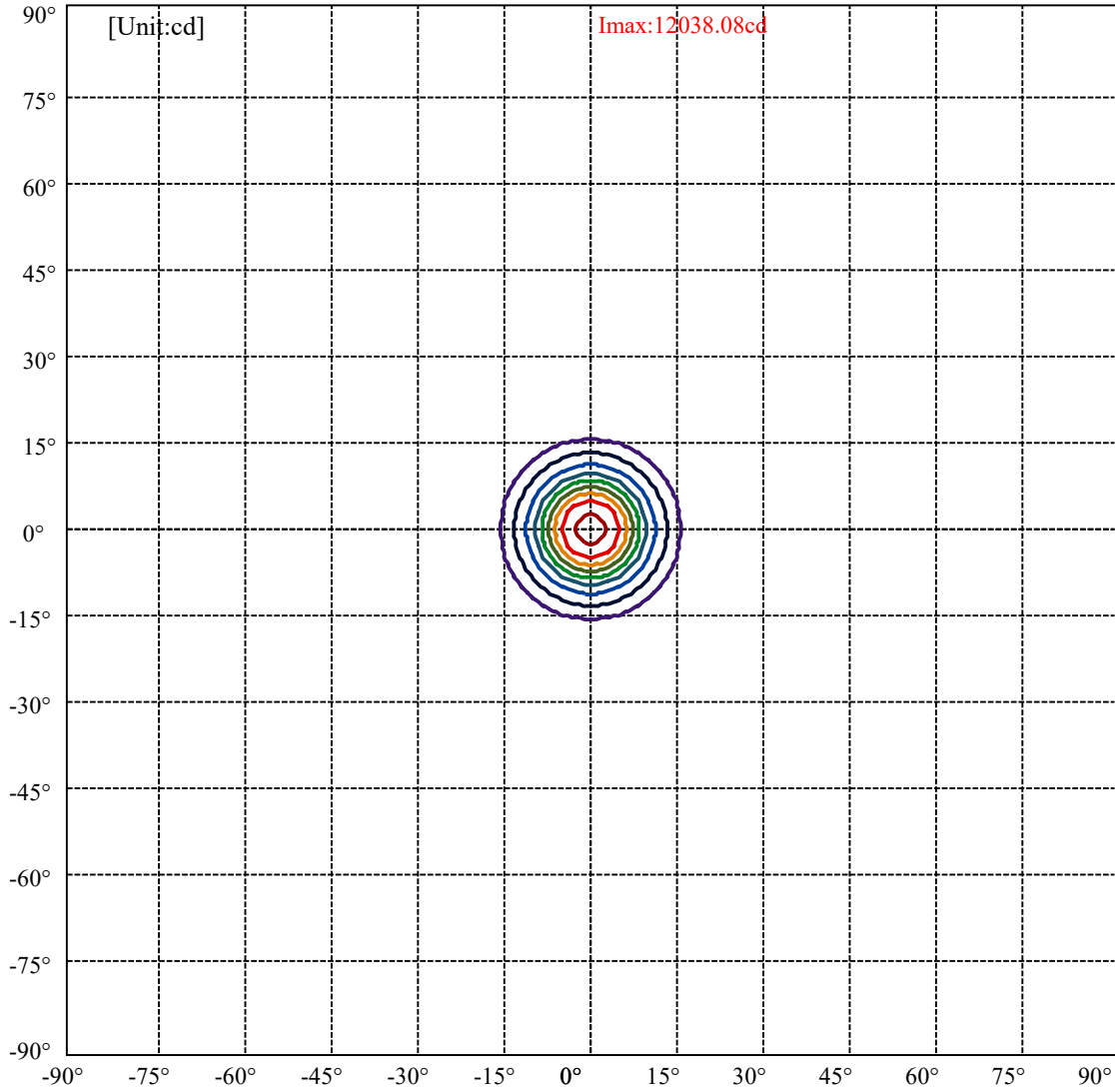


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

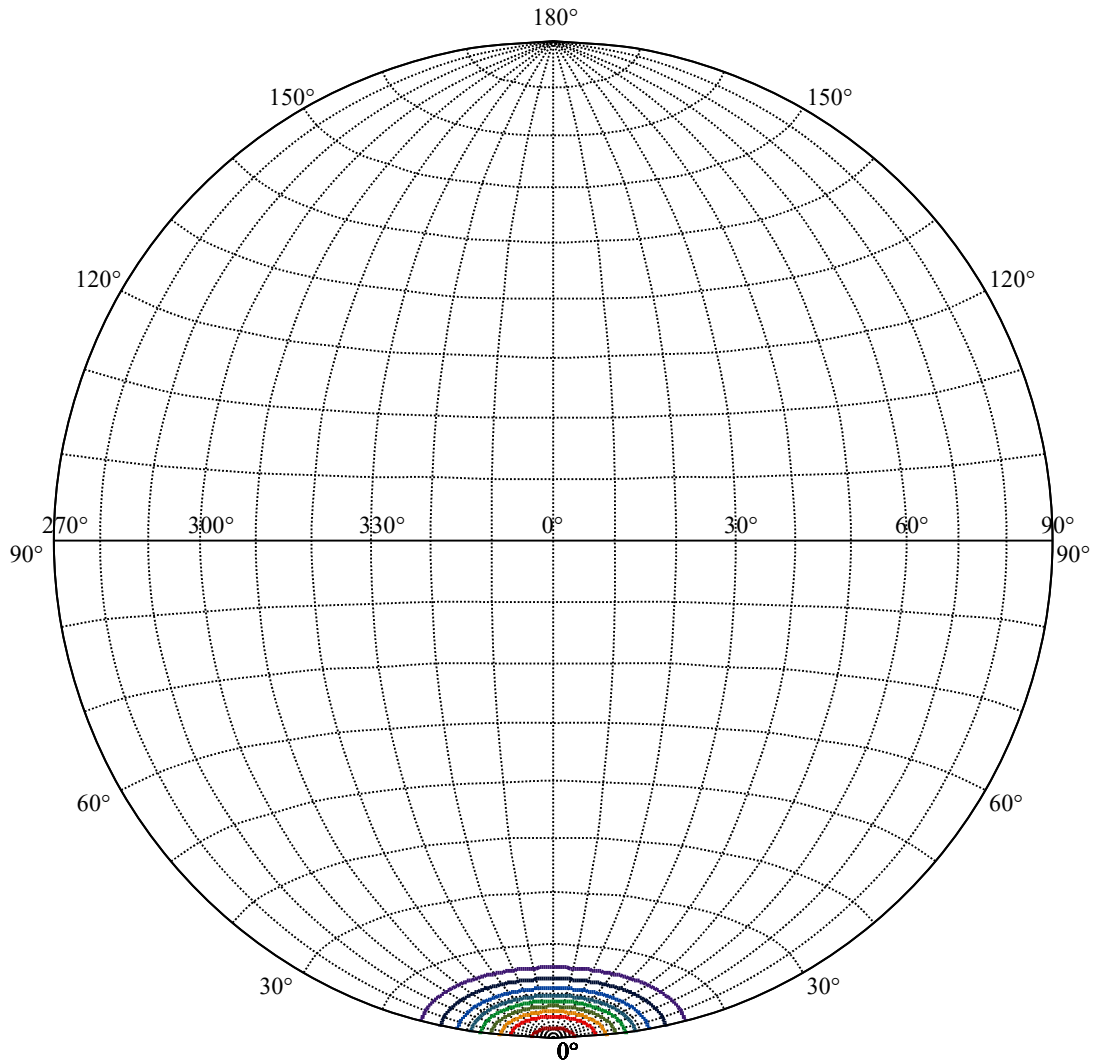
Field angle(10%Imax):C0/180Left:15.4 Right:15.4  
:C90/270Left:15.4 Right:15.4

Beam Angle(50%Imax):C0/180Left:8.4 Right:8.4  
:C90/270Left:8.4 Right:8.4





(10%Imax) 1203.81	—
(20%Imax) 2407.62	—
(30%Imax) 3611.42	—
(40%Imax) 4815.23	—
(50%Imax) 6019.04	—
(60%Imax) 7222.85	—
(70%Imax) 8426.66	—
(80%Imax) 9630.47	—
(90%Imax) 10834.3	—



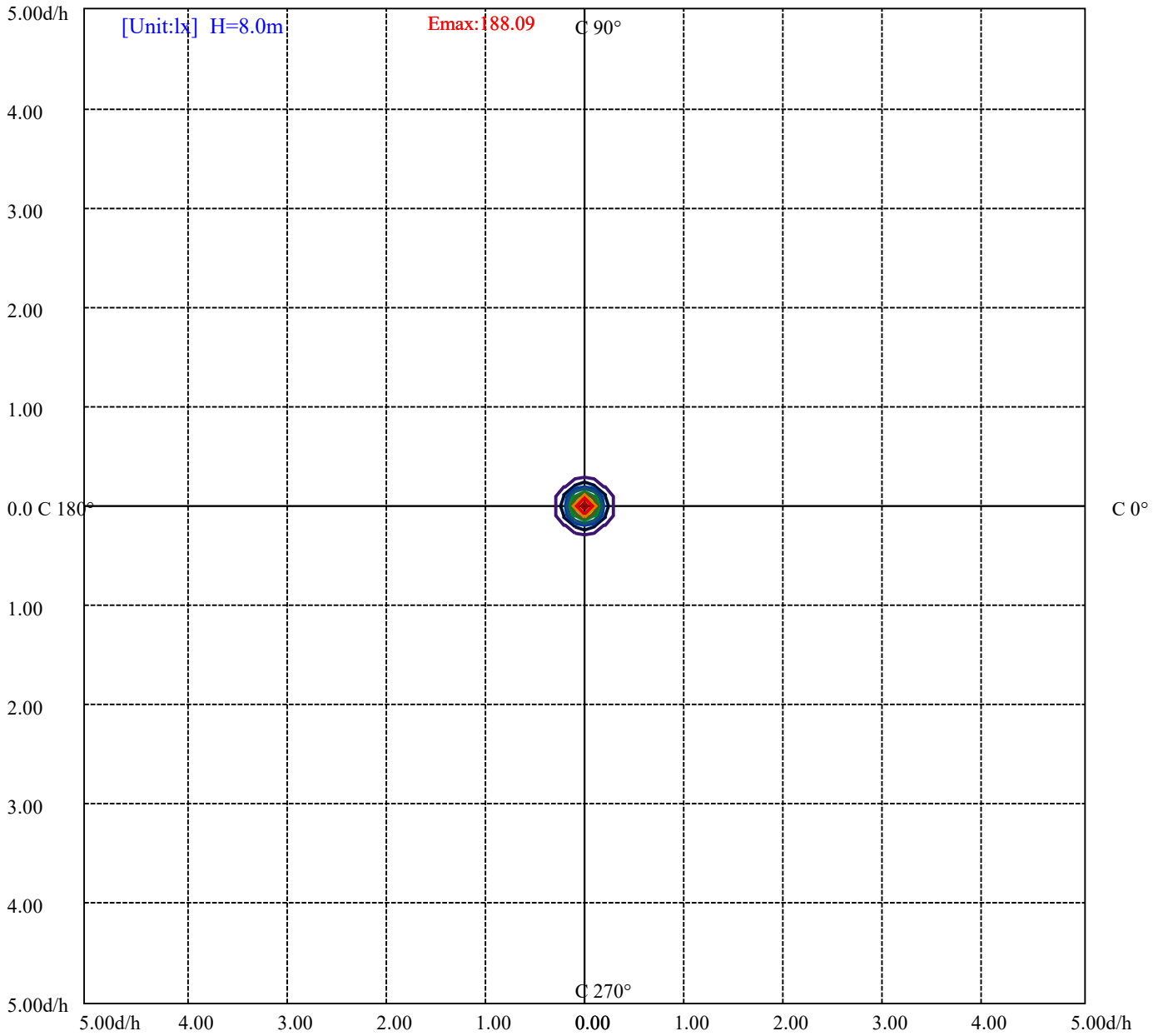
House

[Unit:cd]

Road

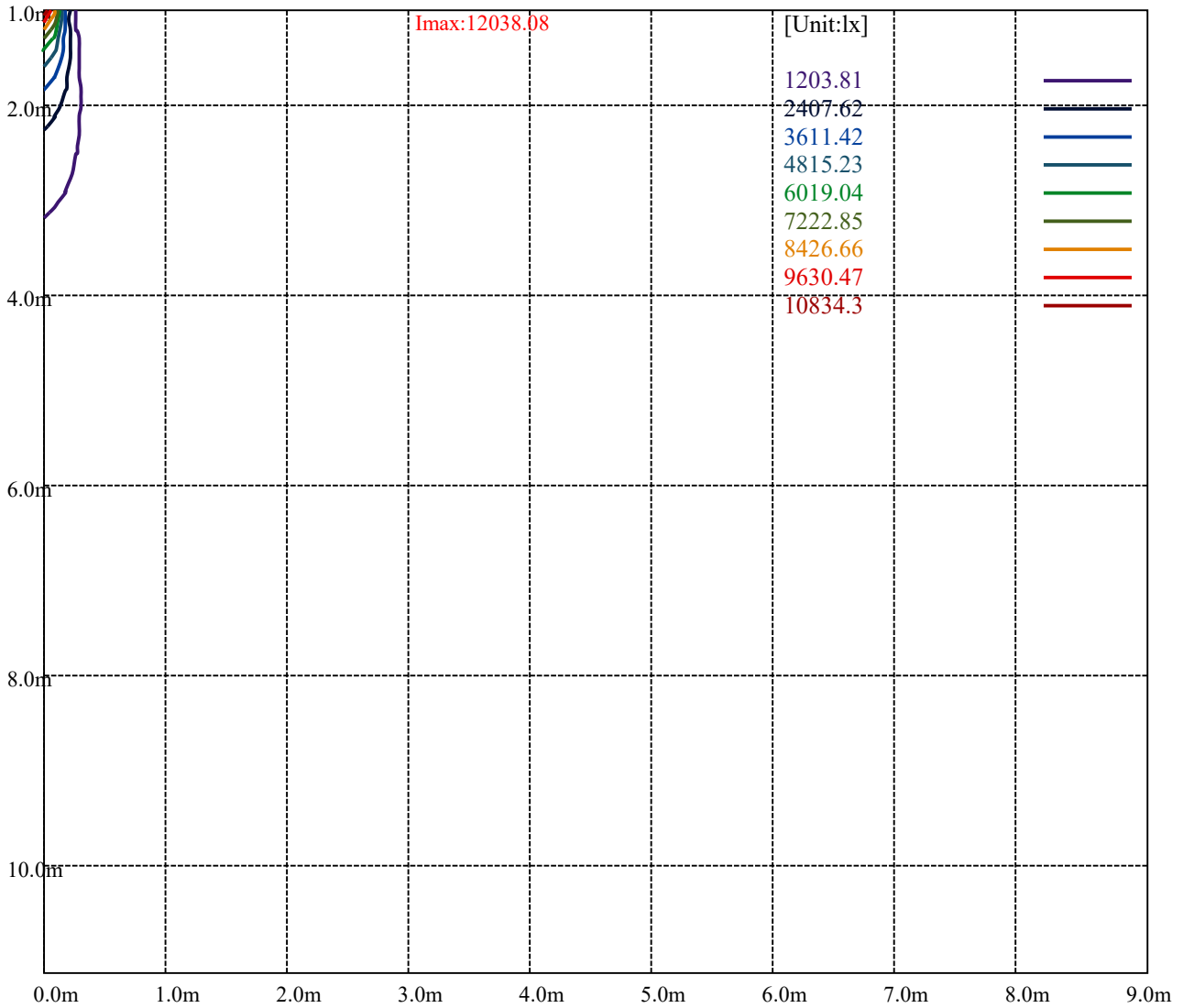
**Imax:12038.08**

(10%Imax) 1203.81	—
(20%Imax) 2407.62	—
(30%Imax) 3611.42	—
(40%Imax) 4815.23	—
(50%Imax) 6019.04	—
(60%Imax) 7222.85	—
(70%Imax) 8426.66	—
(80%Imax) 9630.47	—
(90%Imax) 10834.3	—



- (10%Emax) 18.80938
- (20%Emax) 37.61875
- (30%Emax) 56.42812
- (40%Emax) 75.2375
- (50%Emax) 94.04688
- (60%Emax) 112.8564
- (70%Emax) 131.6658
- (80%Emax) 150.4752
- (90%Emax) 169.2844





Luminance Table

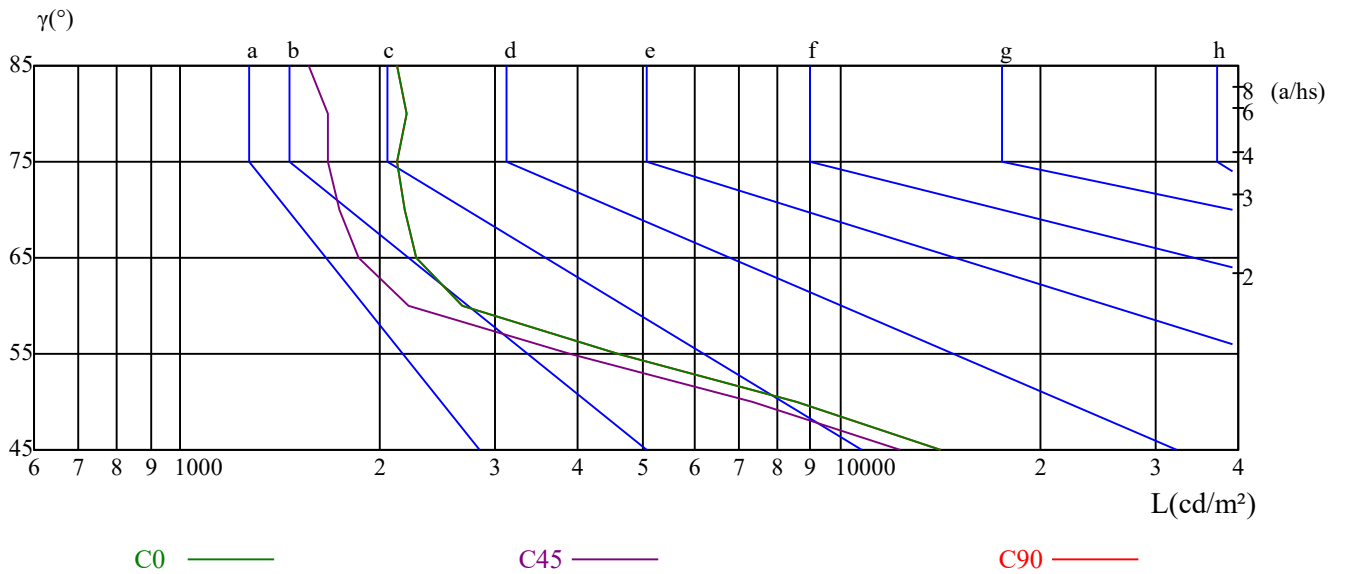
$\gamma$	45	50	55	60	65	70	75	80	85
C0	14155	8565	4606	2671	2276	2179	2133	2197	2122
C45	12338	7357	3895	2222	1859	1744	1668	1673	1564
C90	14155	8565	4606	2671	2276	2179	2133	2197	2122

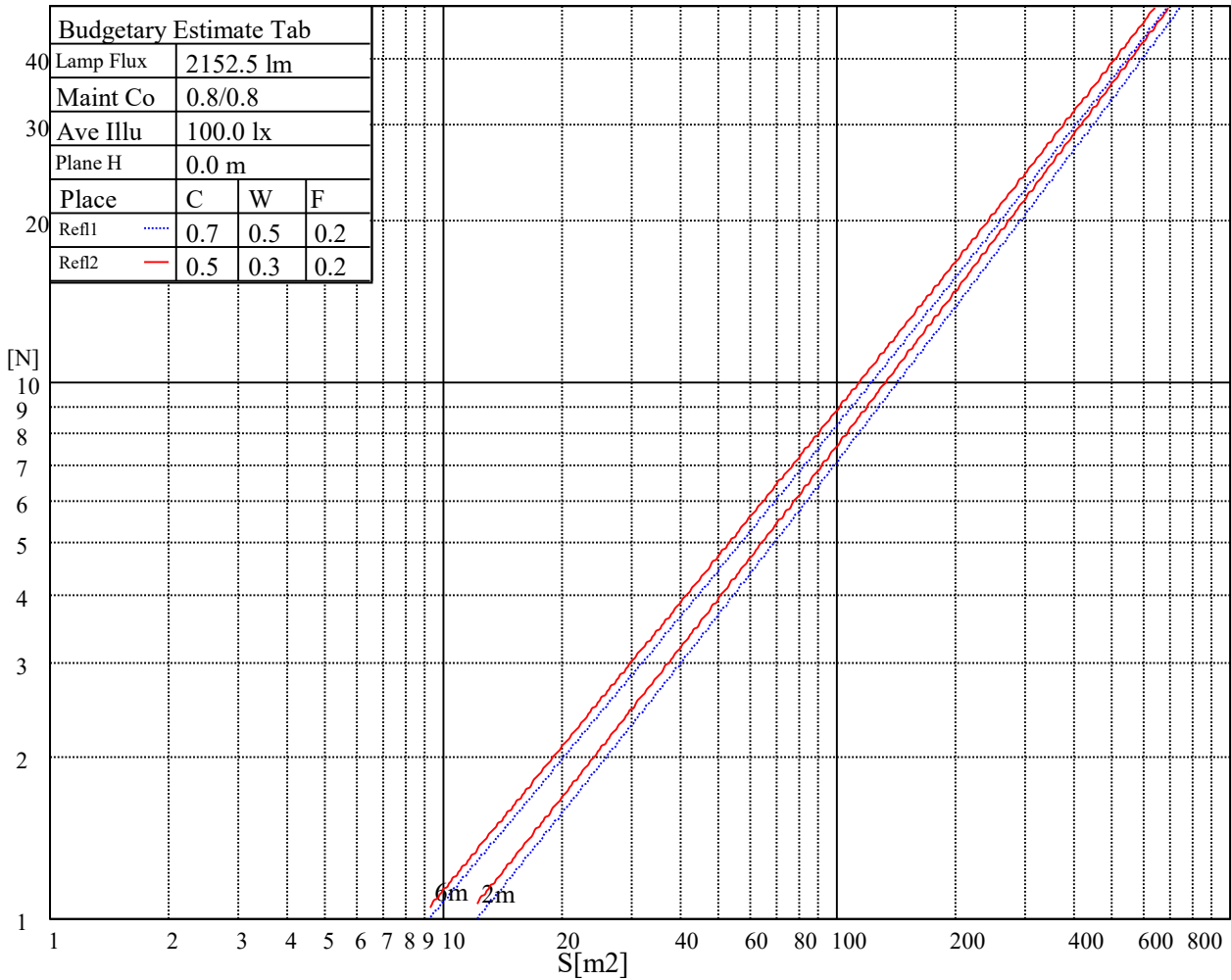
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4968	4968	4968	6521	6521	6521	15497	15497	15497

Glare Table

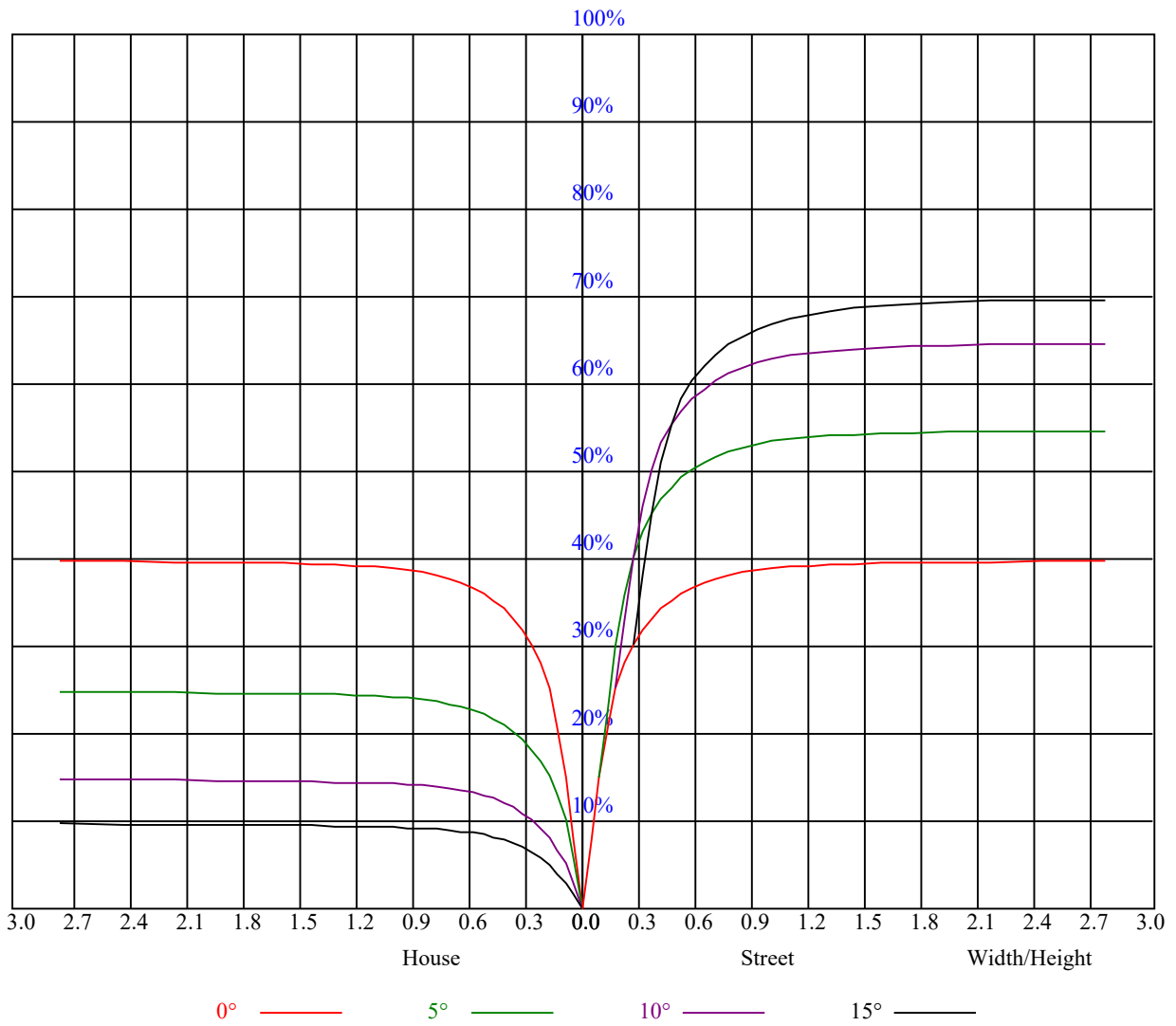
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

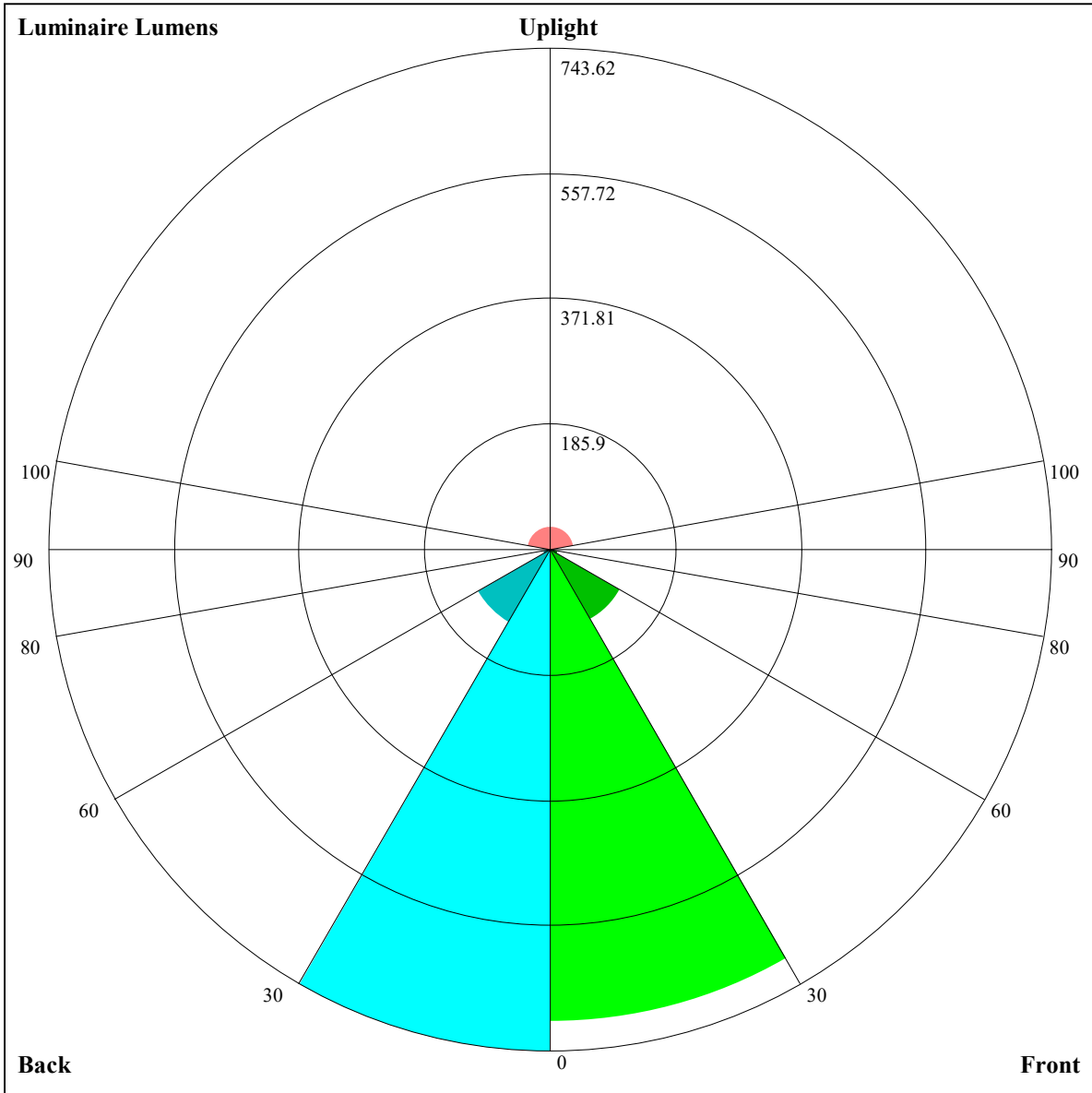
Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.98	0.98	0.98	0.96	0.96	0.96	0.91	0.91	0.91	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.88	0.85	0.83	0.86	0.84	0.81	0.83	0.81	0.79	0.80	0.78	0.77	0.77	0.76	0.74	0.73
2	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.77	0.75	0.73	0.75	0.73	0.71	0.70
3	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.68
4	0.77	0.73	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.66
5	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.68	0.66	0.70	0.68	0.65	0.69	0.67	0.65	0.64
6	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
7	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
8	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
9	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58
10	0.64	0.60	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.58	0.57





Luminaire Lumens:

FL=699.98,FM=119.84,FH=11.91,FVH=4.43

BL=743.62,BM=124.03,BH=12.18,BVH=4.58

UL=7.64,UH=36.38

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	12057.35	9018.24	3958.56	1261.89	775.74	497.71	329.24	209.87	144.58
45.0	12106.90	9365.09	3958.56	1338.42	799.42	523.04	348.51	222.98	149.04
90.0	12007.80	8931.25	3574.26	1098.04	743.48	490.99	315.09	201.89	140.28
135.0	11980.27	10273.52	5087.21	1496.43	847.87	547.81	361.17	248.74	153.99
180.0	12057.35	10219.02	4543.25	1065.67	773.32	522.60	334.08	208.99	146.51
225.0	12106.90	10021.92	4340.10	1069.14	793.47	518.19	338.98	217.75	143.26
270.0	12007.80	10097.34	5158.78	1485.42	823.64	552.77	354.56	218.63	150.91
315.0	11980.27	8987.41	3476.26	1074.21	735.66	473.82	310.90	202.22	136.71
360.0	12057.35	9018.24	3958.56	1261.89	775.74	497.71	329.24	209.87	144.58

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	94.31	53.96	27.91	15.58	12.72	11.34	10.30	9.30	7.82
45.0	93.05	53.74	27.14	15.09	12.66	11.29	10.13	9.30	7.82
90.0	90.90	50.98	25.66	15.03	12.50	11.23	10.13	9.36	7.93
135.0	101.19	61.33	31.22	16.68	12.94	11.51	10.30	9.80	8.42
180.0	96.24	57.09	30.67	16.68	13.10	11.62	10.52	9.91	8.70
225.0	92.83	55.39	28.63	15.86	12.72	11.45	10.30	9.74	8.53
270.0	100.26	60.62	32.98	17.67	13.16	11.67	10.46	9.91	8.59
315.0	86.93	50.93	25.60	14.48	12.39	11.12	10.02	9.30	7.93
360.0	94.31	53.96	27.91	15.58	12.72	11.34	10.30	9.30	7.82

C/γ(°)	90.0
0.0	6.99
45.0	6.99
90.0	6.99
135.0	7.05
180.0	6.99
225.0	6.99
270.0	7.05
315.0	6.99
360.0	6.99